



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/664,915 | 09/22/2003 | Kenneth Neil Whaling | 839-1300 | 6803 |

30024 7590 05/12/2006

NIXON & VANDERHYE P.C.
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

TSAI, CAROL S W

ART UNIT PAPER NUMBER

2857

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,915

Applicant(s)

WHALING ET AL.

Examiner

Carol S. Tsai

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/22/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed September 22, 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Allowable Subject Matter

2. Claims 10-14 are allowed.

3. The following is a statement of reasons for the indication of allowable subject matter:

U.S. Publication 2003/0171897 to Bieda et al. in view of U.S. Publication 2003/0182180 to Zarrow and U.S. Patent No. 6,389,331 to Jensen et al. are references closest to the claimed invention. Bieda et al. disclose a product performance integrated database apparatus and method which uniquely enables product performance data to be analyzed, placed in a prioritized initial risk assessment ranking based on initial failure effect risk so as to subject only high risk assessment failures to a root cause and effect analysis to develop a corrective action for the product failure. Zarrow disclose an improved method for certifying that a manufacturing facility is capable of producing quality products of a particular type comprising auditing the manufacturing facility against a process standard and issuing a certification to the process standard if the manufacturing facility passes the audit. Jensen et al. disclose a facilities management system being subdivided into a plurality of subsystems in which the performance of

Art Unit: 2857

the system is monitored by producing data which denotes a plurality of operational parameters for each of the subsystems and from that data, a global performance index being derived for each subsystem in order to provide an indication of each subsystem's performance. However, Bieda et al. in combination with Zarrow and Jensen et al. do not teach a method for identifying and evaluating hazards associated with a system comprising: a) identifying at least one sub-system of the system to be each evaluated for hazards; b) for each sub-system, identify inherent hazards which if not controlled could lead to or contribute to an unsafe condition of the system; c) for each of the inherent hazards, identify one or more single point failures that could result in an occurrence of the inherent hazard or contribute to one of the unsafe conditions; d) for each of the inherent hazards, identifying features of the system that are associated with the inherent hazard or to the at least one unsafe conditions; e) for each of the at least one unsafe conditions, analyzing a potential severity of the unsafe condition and assigning a severity level to the unsafe condition; 9 g) repeating steps (b) to (e) for each sub-group of the system; review the cumulative analyses of the sub-groups to determine if the severity level assigned to any of the unsafe conditions is greater than a predetermined threshold severity level; h) performing an accident scenario review for each of the unsafe conditions having a severity level greater than the predetermined threshold severity level; i) for each of the unsafe conditions having a severity level greater than the predetermined threshold severity level, identifying and assigning as a group the single point failures occurring in one or more of the sub-systems that lead to or contribute to the unsafe condition; j) determining a likelihood of occurrence that of each of failures in the group will occur in a sequence resulting in the unsafe condition; k) determining a cumulative likelihood that the unsafe condition will occur based on the likelihoods that each of said failures

Art Unit: 2857

will occur in the sequence that result in the unsafe condition; l) if the cumulative likelihood that the unsafe condition will occur is above a predetermined risk threshold level, identify at least one mitigating action to be performed to reduce the likelihood of occurrence or the severity of the unsafe condition; m) for each unsafe condition having a cumulative likelihood of occurrence about the risk threshold level, perform the at least one mitigating action to reduce the likelihood of occurrence of the unsafe condition or to reduce the severity of the unsafe condition; n) for each unsafe condition having a cumulative likelihood of occurrence about the risk threshold level, document the unsafe condition and the at least one mitigating action, and h) performing an accident scenario review for each of the unsafe conditions having a severity level greater than the predetermined threshold severity level; i) for each of the unsafe conditions having a severity level greater than the predetermined threshold severity level, identifying and assigning as a group the single point failures occurring in one or more of the sub-systems that lead to or contribute to the unsafe condition; j) determining a likelihood of occurrence that of each of failures in the group will occur in a sequence resulting in the unsafe condition; k) determining a cumulative likelihood that the unsafe condition will occur based on the likelihoods that each of said failures will occur in the sequence that result in the unsafe condition; l) if the cumulative likelihood that the unsafe condition will occur is above a predetermined risk threshold level, identify at least one mitigating action to be performed to reduce the likelihood of occurrence or the severity of the unsafe condition; m) for each unsafe condition having a cumulative likelihood of occurrence about the risk threshold level, perform the at least one mitigating action to reduce the likelihood of occurrence of the unsafe condition or to reduce the severity of the unsafe condition; n) for each unsafe condition having a cumulative likelihood of occurrence about the risk threshold

Art Unit: 2857

level, document the unsafe condition and the at least one mitigating action, and o) include the documentation of the unsafe condition and the at least one mitigating action in a database of hazards for use in a subsequent method to identify and evaluate hazards in a subsequent system; and including all of the other limitations in the respective independent claims.

Conclusion

4. This application is in condition for allowance except for the following formal matters:

Object to IDS.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jansson discloses a system and an arrangement for evaluating in a defined space or area a delimited area in which there is a degree of urgency greater than the degree of urgency in respect of the remainder of said space, wherein there is disposed within said space or area a plurality of sensors which can evaluate the current or ongoing degree of urgency on the basis of one or more criteria.

Farmer et al. disclose an integrated, data-centric hazard communication system in which

Art Unit: 2857

the system has an authoring module and a means for disseminating hazard information about a material and its components, decomposition products and related materials.

Aldred et al. disclose a method for characterizing a drilling hazard.

Thibault discloses a control system incorporating components that automatically switch information sources in response to actual or potential degradation of information generated by them.

Sarangapani et al. disclose a method and apparatus for determining severity of a trend toward an impending machine failure under actual operating conditions.

Heger et al. disclose a method and an apparatus for diagnosis of sensors and/or processes through use of Bayesian belief networks.

Powell discloses an alarm event generation method and apparatus for signaling an alarm for a process control system.

Colvin discloses a safety circuit permitting the operation of a device when the device is located in a safe operating environment.

Hull discloses a hazard perception test system comprising a CRT screen for displaying a sequence of images of a scene to be viewed by a test subject and in which at least one hazard appears, the images establishing a state of relative movement between the at least one hazard and the test subject, a computer for generating a select signal in response to an action by the subject, the select signal representing an image in the sequence selected by the subject as a point in the sequence at which to change the state, and for determining the ability of the subject to satisfactorily perceive hazards on the basis of the select signal.

Art Unit: 2857

Contact Information


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224.

The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 886-217-9197 (toll-free).

cswt
May 4, 2006
Art Unit 2857


CAROL S.W. TSAI
PRIMARY EXAMINER